CLAIMS

1. A development method in which, while stirring a developer which is a mixture of a magnetic carrier and a toner and supplying the toner of the developer, a toner density TD (%) of the developer is measured, and the toner is supplied to the developer, depending on a reduction in the measured toner density TD (%), wherein

the toner is supplied to the developer so that the measured toner density TD (%) falls within a range specified by:

$$TD \leq \{\gamma t \cdot Vt/Nt/(\gamma c \cdot Vc)\} \times 100 \quad (1)$$

$$Vt = (\pi/6) \cdot (Dtav\_pop)^3$$

$$Sc = \pi \cdot (Dcav\_pop + Dtav\_pop)^2$$

$$Nt = Sc/[(3^{0.5}/2) \cdot (Dtav\_pop)^2]/2$$

$$Vc = (\pi/6) \cdot (Dcav\_pop)^3$$

where a number average diameter of the magnetic carrier is represented by Dcav_pop (μm), a number average diameter of the toner is represented by Dtav_pop (μm), a specific gravity of the magnetic carrier is represented by γc, and a specific gravity of the toner is represented by γt.

2. A development method in which, while stirring a developer which is a mixture of a magnetic carrier and a toner and supplying the toner of the developer, a toner density TD (%) of the developer is measured, and the toner is supplied to the developer, depending on a reduction in the measured toner density TD (%), wherein

the toner is supplied to the developer so that the measured toner density TD (%) falls within a range specified by:

$$TD \leq \{\gamma t \cdot Vt/Nt/(\gamma c \cdot Vc)\} \times 100 \quad (2)$$

$$Vt = (\pi/6) \cdot (Dtav\_vol)^3$$

$$Sc = \pi \cdot (Dcav\_vol + Dtav\_vol)^2$$

$$Nt = Sc/[(3^{0.5}/2) \cdot (Dtav\_vol)^2]/2$$

$Vc = (\pi/6) \cdot (Dcav\_vol)^3$

where a volume average diameter of the magnetic carrier is represented by Dcav_vol (μm), a volume average diameter of the toner is represented by Dtav_vol (μm), a specific gravity of the magnetic carrier is represented by γc, and a specific gravity of the toner is represented by γt.

3. A development method in which, while stirring a developer which is a mixture of a magnetic carrier and a toner and supplying the toner of the developer, a toner density TD (%) of the developer is measured, and the toner is supplied to the developer, depending on a reduction in the measured toner density TD (%), wherein

the toner is supplied to the developer so that the measured toner density TD (%) falls within a range specified by:

$$TD \leq [5.1(Dcav\_vol)^{-1.17}] \times 100 \quad (3)$$

where a volume average diameter of the magnetic carrier is represented by Dcav_vol (μm), and a volume average diameter of the toner is 5.5 (μm).

4. A development method in which, while stirring a developer which is a mixture of a magnetic carrier and a toner and supplying the toner of the developer, a toner density TD (%) of the developer is measured, and the toner is supplied to the developer, depending on a reduction in the measured toner density TD (%), wherein

the toner is supplied to the developer so that the measured toner density TD (%) falls within a range specified by:

$$TD/(Dtav\_vol)^{1.2} \leq [5.1(Dcav\_vol)^{-1.17}/5.5^{1.2}] \times 100 \quad (4)$$

where a volume average diameter of the magnetic carrier is represented by Dcav_vol (μm), and a volume average diameter of the toner is represented by Dtav_vol (μm).

5. The development method according to any of claims 1 to 4, wherein the toner is a toner produced by a pulverizing method.

6. The development method according to any of claims 1 to 4, wherein the toner has a diameter distribution with a standard deviation σ of 15 (%) or more.

7. The development method according to any of claims 1 to 4, wherein the toner has a pigment concentration of 5 (%) or more.

8. A development apparatus in which a developer which is a mixture of a magnetic carrier and a toner is stirred and the toner of the developer is supplied, comprising detecting means for measuring a toner density TD (%) of the developer and supplying means for supplying the toner to the developer, depending on a reduction in the measured toner density TD (%), wherein

the supplying means supplies the toner to the developer so that the measured toner density TD (%) falls within a range specified by:

$$TD \leq \{\gamma t \cdot Vt/Nt/(\gamma c \cdot Vc)\} \times 100 \quad (1)$$

$$Vt = (\pi/6) \cdot (Dtav\_pop)^3$$

$$Sc = \pi \cdot (Dcav\_pop + Dtav\_pop)^2$$

$$Nt = Sc/[(3^{0.5}/2) \cdot (Dtav\_pop)^2]/2$$

$$Vc = (\pi/6) \cdot (Dcav\_pop)^3$$

where a number average diameter of the magnetic carrier is represented by Dcav_pop (μm), a number average diameter of the toner is represented by Dtav_pop (μm), a specific gravity of the magnetic carrier is represented by γc, and a specific gravity of the toner is represented by γt.

9. A development apparatus in which a developer which is a mixture of a magnetic carrier and a toner is stirred and the toner of the developer is supplied, comprising detecting means for measuring a toner density TD (%) of

the developer and supplying means for supplying the toner to the developer, depending on a reduction in the measured toner density TD (%), wherein

the supplying means supplies the toner to the developer so that the measured toner density TD (%) falls within a range specified by:

$$TD \leq \{\gamma t \cdot Vt/Nt/(\gamma c \cdot Vc)\} \times 100 \quad (2)$$

$$Vt = (\pi/6) \cdot (Dtav\_vol)^3$$

$$Sc = \pi \cdot (Dcav\_vol + Dtav\_vol)^2$$

$$Nt = Sc/[(3^{0.5}/2) \cdot (Dtav\_vol)^2]/2$$

$$Vc = (\pi/6) \cdot (Dcav\_vol)^3$$

where a volume average diameter of the magnetic carrier is represented by Dcav_vol (μm), a volume average diameter of the toner is represented by Dtav_vol (μm), a specific gravity of the magnetic carrier is represented by γc, and a specific gravity of the toner is represented by γt.